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CLAIMS

1. Process for oxidising a substrate which is an acyclic or cyclic terpene, or a cycloalkene; or a substituted derivative thereof, which process comprises oxidising said compound with a mutant haem-containing enzyme, the mutant comprising the substitution of an amino acid in the active site by an amino acid with a less polar side-chain.

2. Process according to claim 1 in which the enzyme is a mutant of P450_{cam} or P450_{BM-3}, or a mutant of a naturally occurring homologue of either of these enzymes.

3. Process according to claim 2 in which the enzyme is one in which amino acid 47 and/or 51 of P450_{BM-3}, or amino acid 96 of P450_{cam}, or the equivalent amino acid(s) in a said homologue, have been changed to an amino acid with a less polar side-chain.

4. Process according to any one of claims 1, 2 or 3 in which there are one or more other amino acid substitutions in the active site.

5. Process according to any one of the preceding claims in which the enzyme is (i) P450_{cam} and comprises one or more of the following mutations: F87W, F87I, F87L, T185L, T185F, V247A, V247L or F87A-I395F; or (ii) P450_{BM-3} and comprises the mutation R47L-Y51F.

6. An enzyme as defined in claim 4 or 5 excluding mutants of P450_{cam} which only have the mutations F87A-Y96G-F193A, F87A-Y96G-F193A-C334A, or T101M-T185F-V247M.

7. A polynucleotide which comprises a sequence which encodes an enzyme as defined in claim 6.

8. A cell which expresses:

(i) an enzyme as defined in any one of claims 2 to 6 which in its naturally occurring form has an electron transfer reductase domain, or

(ii) (a) an enzyme as defined in any one of claims 1 to

5;

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- (b) an electron transfer reductase; and
 (c) an electron transfer redoxin.

9. A cell which expresses:

- (a) (i) P450_{cam}, or a fragment thereof; or
 (ii) a naturally occurring homologue of P450_{cam}
 or a fragment thereof; or
 (iii) a mutant P450_{cam}, or a mutant
 homologue of thereof
 as defined in any one of claims 2 to 5; or
 (iv) a P450_{cam} which has at least 70% amino acid
 homology with (i), (ii) or (iii) and
 optionally has the mutations defined in
 any one of claims 3 to 5; and

- (b) an electron transfer reductase; and
 (c) an electron transfer redoxin:

excluding an *E. Coli* DH5 α cell in which the only
 mutants of P450_{cam} which are expressed are amongst the
 following:

H₂N-P450_{cam}-TDGTSST-putidaredoxin reductase-TDGASSS-
 putidaredoxin-COOH,

H₂N-P450_{cam}-TDGTRPGPGPGPGPSST-putidaredoxin
 reductase-TDGASSS-putidaredoxin-COOH,

H₂N-P450_{cam}-TDGTRPGPGPGPGPGPSST-putidaredoxin
 reductase-TDGASSS-putidaredoxin-COOH,

H₂N-putidaredoxin reductase-TDGASSS-putidaredoxin-
 PLEL-P450_{cam}-COOH.

10. A cell according to claim 8 or 9 in which (a),
 (b) and (c) or (b) and (c) are expressed together in the
 same fusion protein.

11. A cell according to any one of claims 8 to 10
 in which:

- (b) is putidaredoxin reductase or a fragment
 thereof; and/or
 (c) is putidaredoxin or a fragment thereof.

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12. A cell which expresses:

- (a) (i) P450_{BM-3}, or a fragment thereof; or
(ii) a naturally occurring homologue of P450_{BM-3}
or a fragment thereof; or
(iii) a mutant P450_{BM-3}, or a mutant
homologue of thereof
as defined in any one of claims 2 to 5.

13. A process according to any one of claims 1 to 5
in which the compound is oxidised in a cell according to
any one of claims 8 to 12

14. A process for making a library of mutants of
P450_{cam} or P450_{BM-3}, or mutants of a homologue of either of
these enzymes comprising contacting a cell according to
any one of claims 9, and 10 and 11 when dependent on
claim 9, or according to claim 12 or an *E.Coli* DH5α cell
as defined in claim 9;

with a mutagen and/or when then the cell is a
mutator cell culturing the cell in conditions in which
mutants are produced.

15. Process for selecting a mutant of P450_{cam} or
P450_{BM-3}, or a homologue thereof, for its ability to
oxidise a particular substrate, which process comprises
screening a group of said mutants for their oxidation
effect on the particular substrate.

16. Process according to claim 15 in which the
mutant is additionally selected for its ability to
oxidise the particular compound to a particular oxidation
product.

17. A process according to claim 15 or 16 in which
the screening is carried out on the library made in a
process according to claim 14.

18. A process for producing a library of oxidation
products comprising providing a substrate as defined in
claim 1 to a library made in a process according to claim
14 and allowing oxidation of the substrate.

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19. An oxidation product obtained by a process according to any one of claims 1 to 5 and 13 wherein optionally the enzyme is one which has been selected in a process according to claim 15, 16 or 17 for use in a method of treatment of the human or animal body by therapy.

20. A pharmaceutical composition comprising an oxidation product obtained by a process according to any one of claims 1 to 5 and 13 wherein optionally the enzyme is one which has been selected in a process according to claim 15, 16 or 17 and a pharmaceutically acceptable carrier or diluent.

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